

**Welcome!** ● ● ● ● ● ●

# ATARNotes

**HIGH SCHOOL RESOURCES**

**Success for all students**

**[atarnotes.com/register](https://atarnotes.com/register)**

← ————— **H E A P S   M O R E** ————— →

**ATARNotes**

# ATAR Notes FREE resources ●●●●●●



## STUDY NOTES

Hundreds downloadable



## LECTURES

Learn from the best



## DISCUSSIONS

Online Q&A



## VIDEOS

Engaging online revision



## NEWSLETTERS

Stay in the loop



## ATAR CALC

See if you're on track



## ARTICLES

Study strategy & tips



## HEAPS MORE

Check out our website

[atarnotes.com/register](https://atarnotes.com/register)

← H E A P S M O R E →

ATARNotes

# Thousands of Study Resources

The image displays the ATARNotes+ website interface on a tablet and a smartphone. The tablet screen shows the main navigation bar with 'ATARNotes+' and 'Login Register' buttons. Below this is the 'AI Answer Bot' section, which includes a description: 'Use our AI Answer Bots to ask questions about our books and content.' A section titled 'We have multiple AI Tutors available.' prompts users to 'Choose the tutor below that will help with your current studies.' The 'VCE-Bot' is highlighted as 'Your personal VCE AI Answer Bot' with a description: 'Hello! I am an AI chatbot who has been trained using the ATAR Notes books and syllabus for your curriculum. I can answer questions about any subject covered by our VCE Complete Course Notes, and any prescribed text covered by our Text Guides.' A 'Login to chat' button is visible. The smartphone screen shows a list of study resources, including 'Macbeth Text Guide', 'Year 12 Biology Notes', 'Year 8 Science Notes', and 'VCE Psychology 3&4'. The background features the large 'ATARNotes+' logo and a grid of resource cards for 'QCE Biology 3&4 Flashcards', 'VCE Biology 3&4 Flashcards', 'ATAR Notes BIOLOGY', 'ATAR Notes BUSINESS', and 'ATAR Notes CHEMISTRY'. The bottom of the tablet screen shows a footer with 'ATARNotes Plus. All rights reserved.' and links for 'FAQ | Terms & Conditions | Privacy Policy'.

## ATARNotes+

**AI Answer Bot**

Use our AI Answer Bots to ask questions about our books and content.

**We have multiple AI Tutors available.**

Choose the tutor below that will help with your current studies.

**VCE-Bot**

Your personal VCE AI Answer Bot

"Hello! I am an AI chatbot who has been trained using the ATAR Notes books and syllabus for your curriculum. I can answer questions about any subject covered by our VCE Complete Course Notes, and any prescribed text covered by our Text Guides."

[Login to chat](#)

**ATARNotes+**

ATARNotes Plus. All rights reserved.

[FAQ](#) | [Terms & Conditions](#) | [Privacy Policy](#)

**ATARNotes**  
QCE Biology 3&4 Flashcards

**ATARNotes**  
VCE Biology 3&4 Flashcards

**ATARNotes**  
BIOLOGY  
COMPLETE COURSE NOTES  
QCE Units 1&2 2021-2023

**ATARNotes**  
BIOLOGY  
COMPLETE COURSE NOTES  
QCE Units 3&4 2021-2023

**ATARNotes**  
BUSINESS  
COMPLETE COURSE NOTES  
QCE Units 3&4 2021-2023

**ATARNotes**  
CHEMISTRY  
COMPLETE COURSE NOTES  
QCE Units 1&2 2021-2023

**ATARNotes**  
Year 8 Science Notes

**ATARNotes**  
Year 12 Biology Notes

**ATARNotes**  
Year 8 Science Notes

**ATARNotes**  
VCE Psychology 3&4

**ATARNotes**  
QCE Biology 1&2 Notes

**ATARNotes**  
QCE Biology 3&4 Notes

**ATARNotes**  
QCE Business 3&4 Notes

**ATARNotes**  
QCE Chemistry 1&2 Notes

# ATARNotes

# Psychology 1&2

Presented by:  
Sunny Norkute

# About Me!

---

- Sunny Norkute
- Graduated in 2021
- ATAR – 96.70
- Study score of 47 in Legal Studies, and 40+ study scores for Literature, English, Further Maths and Psychology
- Studying a Bachelor of Paramedicine at Monash University

# Psychology 1+2 Lecture

## Lecture Outline

- Two content blocks
- Go through an area of content
- Tips for each section
- Q&A throughout

WARNING: We will be moving through content pretty quickly

The lecture slides are available for download from the current page

# Quick Overview

---

## Unit 1

- Psychological Development
- The Brain + Brain Plasticity

## Unit 2

- Social Cognition
- Social Influences on Behaviour
- Sensation and Perception

## Unit 1-4

- Research Methods

# Three Top Tips

---

## 1 – Don't Worry Too Much About Definitions

- There are no 'set' VCAA definitions
- Questions do not ask you to 'define something' (e.g. define classical conditioning)
- If you know the content, you will be able to make up a reasonable definition anyway (if you had to)

## 2 – Do Practice Questions

- Practice questions are the best way to study
- Practice exams are the best way to prepare for the real exam
- The more you do, the better off you will be

## 3 – Create Your Own Resources

- Generally works better than relying solely on external resources
- Helps condense information – there is a lot of useless stuff in the textbook that isn't examinable
- Chapter summaries are a great fit for Psych



# Psychological Development

---

- “The interactive influences of hereditary and environmental factors on a person’s psychological development” (VCAA Study Design)

## Psychological Development

- *Development* refers to changes that occur in a person from birth right through to an elderly age
- A person’s thoughts, emotions and behaviours all change constantly throughout life. Psychological development tries to explain why these changes occur

## Hereditary vs. Environment Factors (Nurture vs. Nature)

- *Hereditary factors* are those that are biologically passed down from an individual’s parents to the individual (your genetics)
- *Environmental factors* are events, experiences and objects that shape a person’s development

It is now commonly accepted that **both** hereditary and environmental factors play a role in shaping an individual’s development. Both types of factors often influence each other in many different ways to determine development

Twin and adoption studies have both helped to prove this

- **Twin studies** involve the use of twins (same or similar hereditary factors)
  - Research has found that identical twins (100% same genetics) are more likely than fraternal twins (50% same genetics) to have similar characteristics, but that these characteristics often aren't exactly the same
  - Therefore, both hereditary and environmental factors influence psychological development
- **Adoption studies** involve the participation of adopted children
  - Researchers examine the similarities and differences between the child and their biological and adopted parents
  - The intelligence of a child is more strongly linked to their biological parents rather than their adoptive parents
  - Therefore, genetic/hereditary factors play a significant role in an individual's intelligence

- *“The biopsychosocial approach as a model for considering psychological development and mental wellbeing” (VCAA Study Design)*

## Biopsychosocial Model

Factors that affect mental health can also be classed into three categories – biological, psychological and social factors

- **Biological factors** originate or develop within the body. Examples include genetics and brain chemistry
- **Psychological factors** originate or develop within the mind. Examples include our beliefs and attitudes, personality, perceptions, emotion control and learning and memory skills
- **Social factors** originate in the external environment. Examples include the strength of our relationships with other people, level of education and social support
- The biopsychosocial model considers all three types of factors **equally important** to mental health

- *“The process of psychological development (emotional, cognitive and social development) over the course of the life span” (VCAA Study Design)*
- **Attachment** refers to the emotional bond that occurs between an infant and their main caregiver/s
- Attachments formed during infancy are essential for the infant’s short and long-term emotional development.

## Ainsworth + the Strange Situation

- American psychologist Mary Ainsworth performed a study using a method called the ‘Strange Situation’.

The infant and caregiver are taken into a strange room with some toys. There are multiple stages of the study:

1. Caregiver and infant play
2. The caregiver sits while the infant plays
3. A stranger enters and talks to the caregiver
4. The caregiver leaves and the stranger lets the infant play, offering comfort if needed
5. The caregiver returns and the stranger leaves
6. The caregiver leaves again
7. The stranger enters again and offers comfort
8. The caregiver returns and offers comfort

During this procedure, the infant's reactions to the stranger and the caregiver coming / going were observed.

Ainsworth identified three different types of attachment:

- **Secure Attachment** – An infant will have a balance between dependence and exploration. 65% of 1-year-olds
- **Insecure Avoidance Attachment** – Infants will not seek contact with their caregiver and will treat them much like a stranger. Can be the result of hostile care. 20% of 1-year-olds
- **Insecure Resistant Attachment** – Infants appear anxious when their caregiver is around, but become very upset when separated. The infant may cry to be picked up but try to squirm free when they are picked up. 12% of 1-year-olds

Infants with secure attachments are more likely to be self-confident and have successful relationships as an adult

## Disorganised Attachment

- Disorganised attachment is a fourth type of attachment identified later, in 1986
- When in the Strange Situation, the infants would show odd and often contradictory behaviours when reunited or separated from their caregivers. For example, when an infant was reunited with a caregiver, they may seek contact by crawling towards a caregiver, but turn their head away to avoid eye contact, or produce strange behaviours like rocking back and forth
- Disorganised attachment has been linked with factors such as post-natal depression and hostile care. However, it has also been seen in 'typical' families, so inappropriate parenting is not always the reason

## Piaget's Theory

Piaget viewed cognitive development as a process of adaptation to the external environment around us. *Adaptation* involves taking in, processing and using new information to adapt to change

- *Assimilation* is the process of gathering new information and fitting it into a pre-existing mental idea  
E.g. A child sees a zebra and calls it a horse
- *Accommodation* involves changing a pre-existing idea to fit new information that has been gathered. This is more advanced  
E.g. A child recognises that a zebra is different from a horse and starts calling it a zebra
- These processes help people to form a *schema* – which is a mental idea of what something is

## Piaget's Four Stages

Piaget believed that every individual went through the same four stages of cognitive development.

- **Sensorimotor Stage (0-2 years)** – Infants explore the world using their senses and their movement. During this stage, *object permanence* develops, which is the understanding that objects still exist even though the infant may not be able to see, feel or hear the object
- **Pre-Operational Stage (2-7 years)** – Young children are able to mentally imagine different objects and experiences. They will begin to use *symbolic thinking* – the ability to use words and pictures to represent things that aren't there
- **Concrete Operational Stage (7-12 years)** – The child can now perform true logical thought, and can accurately imagine the consequences of an action without having to perform the action. Children in this stage also understand the *conservation of mass*, and are able to *classify* objects based on a common feature
- **Formal Operational Stage (12+ years)** – Thought processes become even more sophisticated. There is the increased use of *abstract thinking* – which involves being able to understand something without actually seeing, visualising or experiencing it



## Erikson's Theory of Personality Development

- Erikson believed that personality developed through a combination of the effects of psychological changes in an individual (psycho) and their experiences and interactions with others (social)
- Erikson's theory involved eight stages over the lifespan. During each of stages, an individuals deals with a *psychosocial crisis*, which is considered normal for the stage
- A person's personality is then shaped by how they deal with these crisis – if the crisis are resolved, then the person is likely to have a productive and healthy personality, and vice versa

# Psychological Development

# Social Development

Stage Number	Age	Psychosocial Crisis
1	Birth - 18 months	Trust vs. Mistrust
2	18 months - 3 years	Autonomy vs. Shame and Doubt
3	3-5 years	Initiative vs. Guilt
4	5-12 years	Industry vs. Inferiority
5	12-18 years	Identity vs. Role Confusion
6	18-25 years	Intimacy vs. Isolation
7	25-65 years	Generativity vs. Stagnation
8	65+ years	Integrity vs. Despair

Each crisis involved two opposing characteristics – **one positive and one negative** (e.g. trust vs. mistrust). For the crisis to be successfully resolved it should be in favour of the positive characteristic, although the negative characteristic may still exist to some degree

- 1. Trust vs. Mistrust** – If an infant feels cared for and loved they are likely to develop trust, whereas if an infant feels as if the care is inadequate, they may develop mistrust, and feel anxious and insecure
- 2. Autonomy vs. Shame and Doubt** – Autonomy refers to our ability to do things independently. Shame and doubt refers to having these negative feelings about our capabilities, and therefore being too dependent
- 3. Initiative vs. Guilt** – Initiative involves being able to think independently and perform various actions. Along with this comes the potential for guilt about overstepping boundaries with behaviours (e.g. hitting someone)
- 4. Industry vs. Inferiority** – Industry refers to the ability to be productive and perform work and other practical activities (primary school age). During this time, a child may develop a sense of inferiority if they feel less successful than others
- 5. Identity vs. Role Confusion** – Individuals develop a sense of identity, which is the overall image or view they hold of themselves (secondary school age). If a person is unable to develop a clear identity, then they will likely experience role confusion – not knowing who they are or how they fit in

**6. Intimacy vs. Isolation** – Intimacy refers to caring for and sharing yourself with another person. Isolation refers to a sense of being alone. During this stage, relationships often form with friends and significant others, which can lead to intimacy or isolation.

**7. Generativity vs. Stagnation** – This stage corresponds with adulthood (25-65 years). Generativity refers to an individual's concern about other people, including future generations and the world that they will live in. Stagnation refers to boredom, a lack of activity and concern with personal needs (rather than other's).

**8. Integrity vs. Despair** – Integrity refers to a sense of satisfaction with your achievements in life, while despair involves the feeling that life has been full of missed opportunities and wasted years. This refers to looking back on life in late adulthood.

- *“The role of sensitive and critical periods in a person’s psychological development” (VCAA Study Design)*

### Critical Periods

- A critical period is a specific period of time during which an organism is most vulnerable to the absence of certain environmental stimuli  
E.g. If one eye is kept shut after birth, visual impairment will probably occur
- *Imprinting* is a great example of critical periods. A newly hatched mallard duckling will attach to and follow (imprint) the first noisy moving object it encounters after birth. Imprinting will only occur between 13 and 16 hours after birth in the duckling. Therefore, this is the critical period for imprinting.

### Sensitive Periods

- A sensitive period is a specific period of time during which an organism is more responsive to certain environmental stimuli or experiences. They have been described as ‘windows of opportunity for learning’ because they are the best times for learning to occur.  
E.g. Learning your native language – sensitive period lasts up until approximately age 12

- *“The usefulness, and limitations, of psychological criteria to categorise behaviour as typical or atypical, including cultural perspectives, social norms, statistical rarity, personal distress and maladaptive behaviour” (VCAA Study Design)*
- Defining what is considered to be atypical behaviour is extremely difficult
- The DSM-5 identifies the following characteristics as signs of atypical behaviour:
  - violating **social norms** → going against how society expects people to behave
  - **statistical rarity** → atypical behaviours arising from a statistically rare condition
  - **personal distress** → the effect atypical behaviours have on an individual's circumstances; atypical behaviour usually involves distress that the individual is seeking relief from
  - **maladaptive behaviour** → negative coping mechanisms used to adapt to one's circumstances
  - understanding different **cultural perspectives** is important to understand an individual's behaviour and consider what may be 'atypical' in one culture may not be atypical in another

- *“The concepts of normality and neurotypicality, including consideration of emotions, behaviours and cognitions that may be viewed as adaptive or maladaptive for an individual” (VCAA Study Design)*

## Normality

- Normality is a very difficult concept to clearly define
- For example, some behaviours may be normal in some cultures or situations, and be abnormal in other cultures or situations. Therefore, psychologists often look at typical and atypical behaviours, as well as adaptive and maladaptive behaviours
- *Typical behaviour* means that an individual acts as they usually do
- *Atypical behaviour* means that an individual acts in a way that is different, or unusual, for them. This can raise mental health concerns if the behaviour is persistent and not useful to functioning
- *Maladaptive behaviour* is any behaviour that interferes with a person’s ability to function in their environment. It generally results in a person struggling to cope with the general stressors of life

- “Normal variations of brain development within society, as illustrated by neurodiversity” (VCAA Study Design)
- **Neurodiversity** refers to the idea that there are many different ways people experience + interact with their environment, and that there isn't one correct way of behaving, learning or thinking
- **Autism spectrum disorder (ASD)**
  - variations usually seen in methods of communication, behaviour + learning
  - spectrum → people with autism do not have identical experiences, strengths and challenges, rather there is a wide variation
- **Attention-deficit hyperactivity disorder (ADHD)**
  - affects behaviour, creating difficulty focusing on tasks + routine



# Psychological Development

- *“The role of mental health workers, psychologists, psychiatrists and organisations in supporting psychological development and mental wellbeing as well as the diagnosis and management of atypical behaviour, including culturally responsive practices” (VCAA Study Design)*
- **Culturally responsive practices** involve understanding the patient + their cultural norms + how this may alter patient experience in a clinical setting
- **Respect individual experiences**
  - mental health workers must alter the way they treat patients based on factors affecting their health + wellbeing
- **Hire diverse staff**
  - that have similar experiences to patients; create a familiar + comfortable environment
- **Be involved in the community they work for**
  - builds trust
- **Listen carefully to patients’ experiences**
  - empathise with patients

- “Different approaches over time in understanding the role of the brain in behaviour and mental processes” (VCAA Study Design)

### Brain vs. Heart Debate

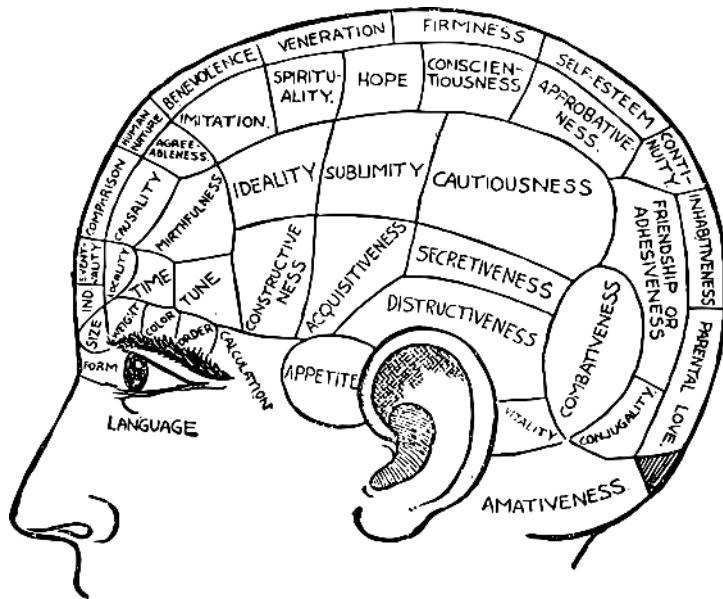
- For thousands of years, it was debated whether mental processes and perceptions were located within the heart or within the brain
- *Heart hypothesis* (all mental processes are located in the heart) vs. *brain hypothesis* (all mental processes are located within the brain)
- Alcmaeon, a Greek philosopher, identified the brain as the centre of mental processes (around 500 B.C.)

### Mind-Body Problem

- This is the question whether our bodies and minds are separate entities or whether they are one and the same
- For centuries, it was believed that the mind and the body were separate entities. The mind could control the body, but the body couldn't control the mind
- In the 17<sup>th</sup> century, René Descartes proposed that the mind and the body interact with each other through the *pineal gland* - a small structure located deep in the brain

### Phrenology

- Phrenology is the study of the relationship between the surface features of the skull and a person's characteristics
- Strong characteristics = bump on skull
- Not credible, no scientific evidence to support it



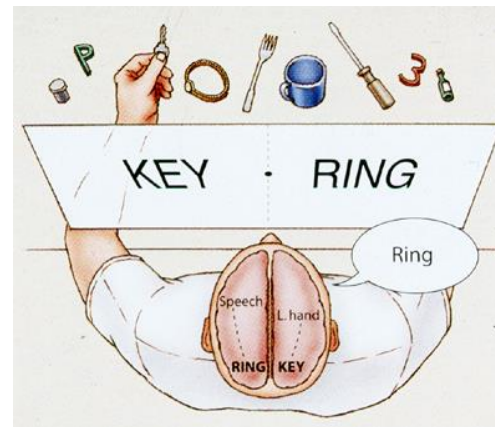
### First Brain Experiments

The first brain experiments used one of two main approaches – ablation and electrical stimulation

- **Ablation** involved removing/destroying certain parts of the brain, and then noting any change in behaviour
- **Electric stimulation** involved electrically stimulating different parts of the brain, and recording the response. This method helped to discover the motor cortex and map the entire cerebral cortex

### Split Brain Experiments

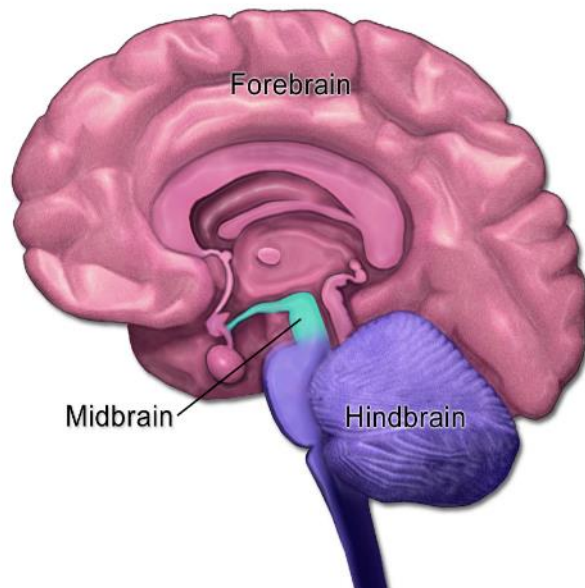
- Split-brain surgery involves cutting the *corpus callosum* and was used to treat epilepsy. One famous split-brain experiment was performed with a participant known as N.G.
- It was found that information that is flashed in the *left visual field* (the left side of vision) is sent to the *right* side of the brain for processing, and information that is flashed in the *right visual field* (the right side of vision) is sent to the *left* side of the brain for processing.
- N.G. was able to name pictures of objects that were flashed in her right visual field (e.g. that's a dog). However, she was unable to name pictures of objects in her left visual field, because the information was unable to travel between hemispheres, and the left hemisphere is responsible for verbal functioning



- “The roles of the hindbrain, midbrain and forebrain, including the cerebral cortex, in behaviour and mental processes” (VCAA Study Design)

The brain is split into three main areas – the hindbrain, the midbrain and the forebrain

### Hindbrain



- The hindbrain contains the cerebellum and medulla.
- The **cerebellum** is located at the base of the brain. It contains 80% of the brain's neurons! The cerebellum is responsible for fine muscle movement and activities that require a skilled and precise set of movements, such as touch-typing
- The **medulla** is the lowest part of the brain stem and connects the spinal cord to the brain. The medulla controls important functions of the body such as breathing, swallowing and salivating. Damage to the medulla can therefore be fatal

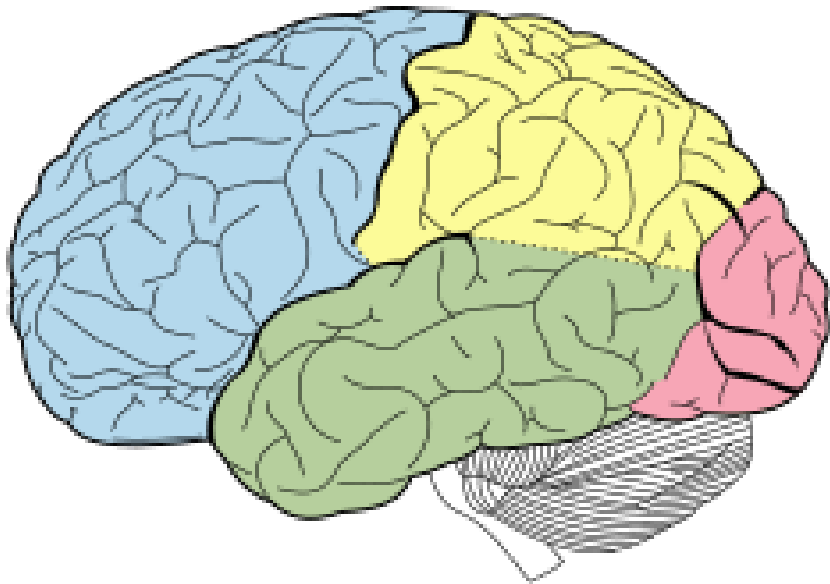
### Midbrain

- The midbrain is involved with movement, sleep and the processing of a lot of our sensory information
- The *reticular formation* is a network of neurons that runs through the midbrain and the hindbrain. It plays a number of roles, including helping to maintain consciousness and screening incoming sensory information, so that the brain doesn't overload. The *reticular activating system (RAS)* extends in all different directions from the reticular formation, and helps to control arousal (e.g. sleep)

### Forebrain

- The forebrain is the largest part of the brain. It is responsible for processes such as thinking, memory and learning, and includes the cerebrum, hypothalamus and thalamus
- The *hypothalamus* regulates the release of hormones from different glands around the body. It also plays a key role in maintaining the body's internal functioning, such as maintaining a consistent body temperature

- The cerebrum makes up most of the forebrain. The outer surface of the cerebrum is called the *cerebral cortex*. The cerebral cortex is responsible for almost everything that we feel, do or think. This includes our sensory information and our movement. The cerebrum is divided into two hemispheres, each of which is made up of four lobes. They are the *temporal lobe*, the *parietal lobe*, the *occipital lobe* and the *frontal lobe*



- The *thalamus* receives information from nearly all of the sensory organs (apart from the nose). It then sends the information to the relevant part of the brain for processing

The cerebral cortex is involved with many complex mental abilities such as planning, learning, memory, language and problem-solving. It processes incoming sensory information (from the PNS) and also controls voluntary movement

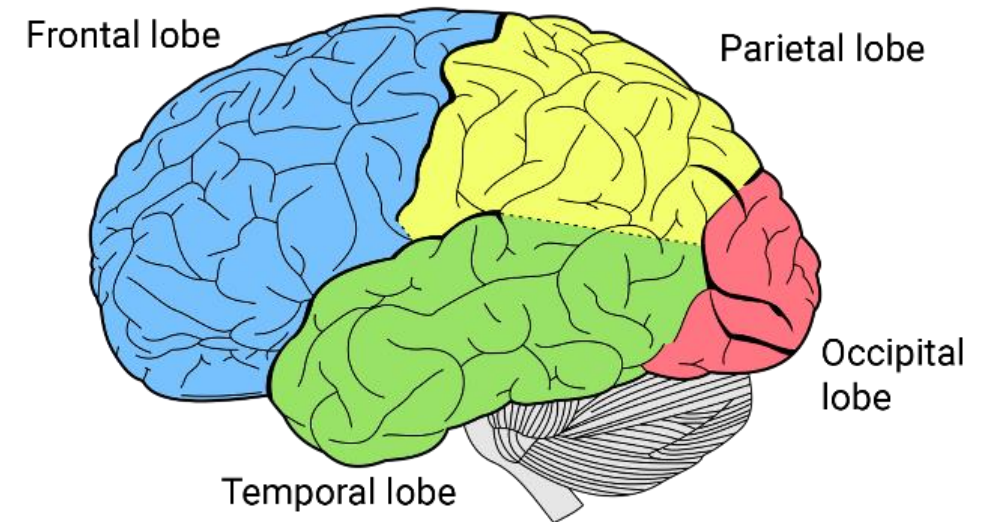
### The Hemispheres

- The two *cerebral hemispheres* are connected by the corpus callosum. The [left hemisphere](#) receives sensory information from and controls movement on the [right](#) side of the body. It specialises in tasks that involve language and logic
- The [right hemisphere](#) receives sensory information from and controls movement on the [left](#) side of the body. It specialises in non-verbal functions such as creative thinking, spatial and visual thinking (e.g. a jigsaw) and recognising patterns and faces



### Frontal Lobe

- The frontal lobe is the largest brain lobe
- At the front of the frontal lobe is the prefrontal cortex, an area involved with complex mental processes such as planning, problem-solving and reasoning
- The *primary motor cortex* is located at the rear of the frontal lobe, and is responsible for initiating and controlling all voluntary movements
- *Broca's area* is also located in the frontal lobe. It is only located in the left hemisphere of the brain. Broca's area helps to coordinate messages to areas such as your tongue, jaw and mouth so that you can pronounce words and sounds clearly. It is essential for speech



### Parietal Lobe

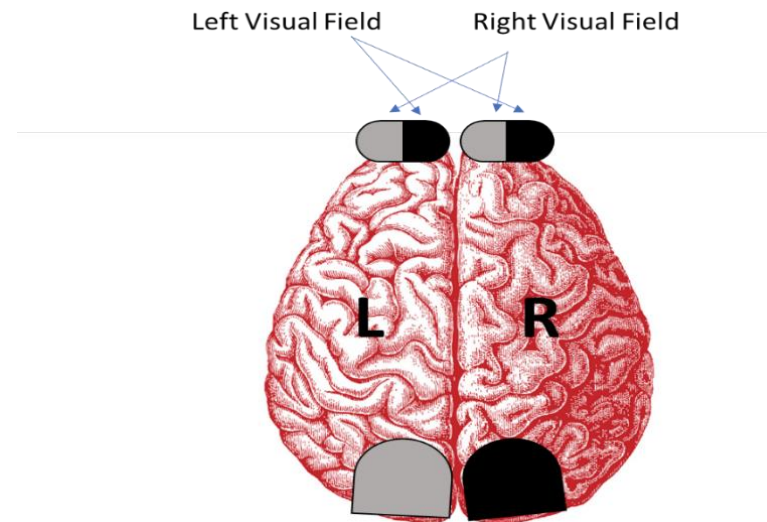
- The parietal lobe is located behind the frontal lobe in the upper half of the brain
- It contains the *primary somatosensory cortex*, which is located at the front of the parietal lobe. It receives and processes sensory information from the skin and other body parts

### Occipital Lobe

- The occipital lobe is located at the back of each cerebral hemisphere and is almost entirely devoted to vision. *The primary visual cortex* is located at the back of each occipital lobe and receives visual information

The *left half of each eye* sends information to the *left occipital lobe*. The *right half of each eye* sends information to the *right occipital lobe*

However, the *left half of each eye* is receiving visual sensory information from the *right visual field*. The *right half of each eye* is receiving visual sensory information from the *left visual field*



### Temporal Lobe

- The temporal lobe plays an important role in auditory perception and is also heavily involved in memory (looked at in Year 12)
- The *primary auditory cortex* (one in each temporal lobe) receives and processes sounds from both ears
- *Wernicke's area* is located right next to Broca's area in the left hemisphere. It is essential for processing speech – words don't make sense until they have been processed by Wernicke's area

### Question 4

Gertrude is able to speak clearly and can put together long sentences. However, when she speaks the words are mostly meaningless, and she has trouble understanding others. Gertrude's symptoms are consistent with brain damage to

- A. Broca's area in the frontal lobe.
- B. the auditory cortex in the parietal lobe.
- C. Wernicke's area in the temporal lobe.
- D. the visual cortex in the occipital lobe.

- *“The capacity of the brain to change in response to experience and brain trauma, including factors influencing neuroplasticity and ways to maintain and/or maximise brain functioning” (VCAA Study Design)*

Infancy and adolescence are times of rapid change in both the structure and function of the brain

There are three key changes that occur in the brain during infancy and adolescence

## Development of Myelin

- This occurs around many neurons and results in an increase in brain size. The most intense burst of myelination occurs not long after birth

## Synaptic Pruning

- *Synaptogenesis* is the creation of new synapses within the brain. Synapses are the connection between neurons – the place where neurons communicate. It is the main reason for the brain's increase in size during infancy and adolescence
- *Synaptic pruning* is the elimination of weak or unused synaptic connections. Through this process, the brain gets rid of unimportant connections, but keeps the important connections (synapses) between neurons

- *Plasticity* is the ability of the brain to change over time in response to experiences
- *Adaptive plasticity* is the ability of the brain to compensate for functions that may have been lost (often due to brain injury), and to maximise its remaining functions. Adaptive plasticity usually occurs more successfully in younger people



Two neural processes occur that allows the brain to recover lost functions:

- *Rerouting* is when an undamaged neuron that has lost a connection with a neuron forms a new connection with a different neuron
- *Sprouting* is when a neuron grows extra dendrites, allowing it to connect with more neurons
- Due to adaptive plasticity, the brain is able to shift functions from damaged areas to undamaged areas, and therefore make sure that those functions aren't lost

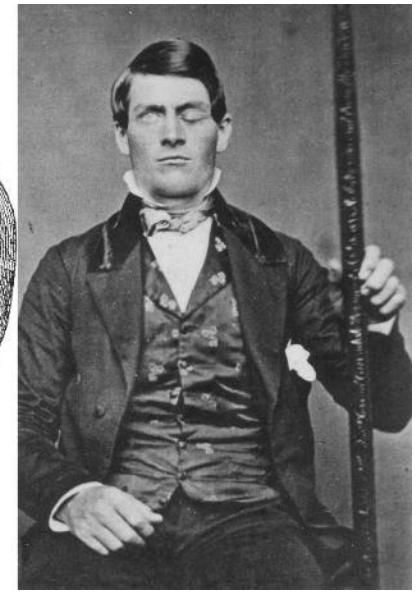
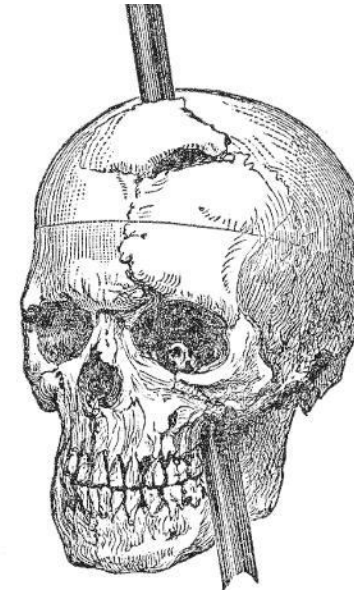
- *“The impact of an acquired brain injury (ABI) on a person’s biological, psychological and social functioning” (VCAA Study Design)*
- Phineas Gage is a famous case study
- Gage had an iron rod blow through his cheek and out the top of his skull. He survived, but after the incident his personality changed drastically, and he became aggressive, impatient and difficult to work or get along with.

### Biological Changes

- An injury to the cerebral cortex results in a reduced level of movement and facial expressions may become blank
- physical symptoms like headaches, nausea, dizziness etc.

### Psychological Changes

- People who have had an injury to the cerebral cortex tend to have quite a few psychological changes, including a consistent lack of concern about anything (apathy), increased aggressiveness, an inability to plan and impulsive, often silly behaviour

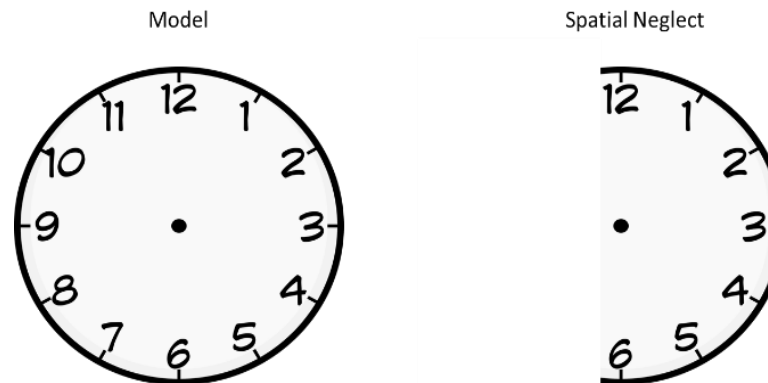


## Social Changes

- Injury to the cerebral cortex often results in changes to an individual's personality, which can often lead to the breakdown of social relationships with family, friends and colleagues, which can have a major social impact

## Spatial Neglect

- This is an attentional disorder that results in patients being unable to notice anything on either the left or right side of their body (usually the left side). They behave as though one side of their world doesn't exist at all. This occurs due to damage to the rear area of the parietal lobe. *SAP = Spatial, Attentional, Parietal*



- “The contribution of contemporary research to the understanding of neurological disorders” (VCAA Study Design)

**Parkinson's disease** is characterised by the death of neurons in the *substantia nigra*. When neurons in the substantia nigra die, the amount of dopamine is reduced

As the amount of dopamine decreases, so does the smoothness and control of voluntary movements

There are four key motor symptoms of Parkinson's disease – tremors, muscle rigidity, slowness of movement and postural instability/balances issues

Non-motor symptoms of Parkinson's disease include problems with speech, a loss of sense of smell, sweating, fatigue, confusion and panic attacks

## Animal Studies

- Animal studies allows researchers to investigate Parkinson's disease in ways that ethically wouldn't be allowed using humans
- For example, animals might be induced with Parkinson's disease, and then treated with experimental medication to determine its effectiveness

## Neuroimaging Techniques

- Neuroimaging techniques such as PET and/or fMRI scans can be used to measure changes in brain structure and activity
- Neuroimaging techniques are able to measure things such as brain activity of Parkinson's sufferers compared with non-Parkinson's sufferers

- *“Chronic traumatic encephalopathy (CTE) as an example of emerging research into progressive and fatal brain disease” (VCAA Study Design)*
- CTE is a progressive brain condition thought to be caused by repeated concussions + hard hits to the head
- ***symptoms***
  - eventually leads to dementia
  - short-term memory loss, mood changes, anxiety + depression, difficulty in decision-making
- ***diagnosis***
  - no test to definitively diagnose CTE
  - diagnosed based on past participation in contact sports + presenting symptoms
  - MRI + CT scans may identify changes, but CTE may not be seen on all brain scans
  - definitively diagnosed post-mortem
- ***treatment***
  - supportive treatments
  - temporary medications – no long-term treatment

# All Done!

---

- Thanks for coming!
- Good luck with Psychology and all of your studies this year!!!